

MERX[®] -T

Automated Total Mercury System for U.S. EPA Method 1631

MERX-T Total Mercury System

Benefits:

- Prevents Contamination
- Reduced Waste
- Less Maintenance
- Saves Time
- Modular
- Ultra-Sensitive

These benefits translate into time and money saved for the laboratory.

Prevents Contamination – The biggest challenge to performing quality ultra-low level mercury analysis is avoiding contamination. MERX greatly reduces sample contamination in two key areas:

1. Carryover contamination – By purging samples in their autosampler vials, only gaseous elemental mercury is transferred from the vial through an inert transfer line to the amalgamation trap or CVAFS detector, vastly reducing carryover contamination. Most other systems struggle with carryover contamination due to the use of a common pump, transfer line and gas-liquid separator.
2. Atmospheric contamination – Utilizing sealed sample containers on the autosampler prevents atmospheric mercury and dust from contacting the sample. Other systems have open vials, requiring operation in a HEPA-filtered atmosphere.

Reduced Waste and Reagent Consumption – Rather than requiring a continuous flow of reagents, like most mercury analyzers, MERX only uses the necessary amount of reagents for each sample, minimizing reagent and waste disposal costs and environmental impact.

Less Maintenance – Syringe and peristaltic pumps are a huge source of cross-contamination and require constant maintenance and tubing replacement. With the pump-free MERX system, these issues are eliminated.



Saves Time

In the MERX-T, samples are purged directly in the autosampler vials using N₂ gas to carry elemental mercury to gold amalgamation traps. The MERX-T uses two gold amalgamation collection traps in parallel, so that while one collection trap is heated to the common analytical trap, the next sample can be purged to the other collection trap. The result is a rapid analytical time. More significantly though, with the contamination prevention measures designed into the MERX-T there are fewer reruns, providing substantial time savings.

Modular

All MERX systems utilize the same autosampler and detector, with different sample processing modules depending on the analytical method being followed. This eliminates the need and expense of having completely separate systems in order to analyze both total mercury and speciation of mercury.

Ultra-Sensitive

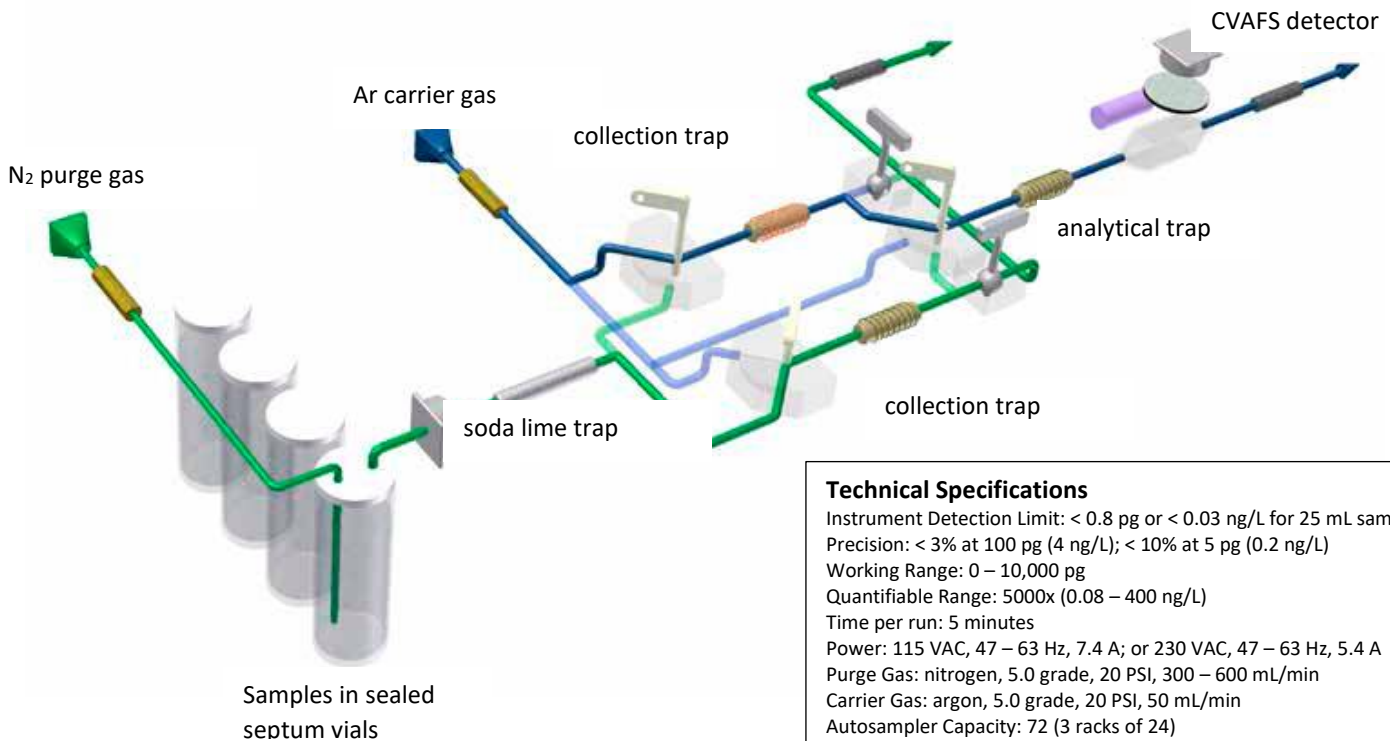
Mercury is detected using the Brooks Rand Model III cold vapor atomic fluorescence spectrophotometer (CVAFS) with patented optics for enhanced sensitivity.

Other Features

ICP-MS Interfacing - The system is designed to easily interface with the laboratory's ICP-MS. Users have the flexibility to run the system with CVAFS only, ICP-MS only or with CVAFS and ICP-MS in series.

Data Processing - Mercury Guru® software integrates the detector signal and calculates results based on calibration and sample volume information. QC results are automatically calculated and flagged based on user-defined criteria.

Liquid Overflow Protection - In the unlikely event of liquid being drawn up through the sample probe, the system will automatically shut down to prevent sample loss and damage to the system.



Technical Specifications

Instrument Detection Limit: < 0.8 pg or < 0.03 ng/L for 25 mL sample
 Precision: < 3% at 100 pg (4 ng/L); < 10% at 5 pg (0.2 ng/L)
 Working Range: 0 – 10,000 pg
 Quantifiable Range: 5000x (0.08 – 400 ng/L)
 Time per run: 5 minutes
 Power: 115 VAC, 47 – 63 Hz, 7.4 A; or 230 VAC, 47 – 63 Hz, 5.4 A
 Purge Gas: nitrogen, 5.0 grade, 20 PSI, 300 – 600 mL/min
 Carrier Gas: argon, 5.0 grade, 20 PSI, 50 mL/min
 Autosampler Capacity: 72 (3 racks of 24)
 Communication: 1 or more PC USB v1.x/v2.x, RS-232 x 1
 Weight: 34 kg (75 lbs)
 Dimensions: Height: 54 cm (21 in)
 Width: 99 cm (39 in)
 Depth: 59 cm (23 in)